



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/774,788	02/09/2004	Chow-Shing Shin	386998047US	9048
25096	7590	06/02/2005	EXAMINER	
PERKINS COIE LLP			LEE, PATRICK J	
PATENT-SEA			ART UNIT	
P.O. BOX 1247			2878	
SEATTLE, WA 98111-1247			PAPER NUMBER	

DATE MAILED: 06/02/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/774,788	Applicant(s) SHIN ET AL.	
	Examiner Patrick J. Lee	Art Unit 2878	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 09 February 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-27 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-27 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 09 February 2004 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Drawings

1. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference character(s) not mentioned in the description:

Label "2" is not disclosed in the specification.

Corrected drawing sheets in compliance with 37 CFR 1.121(d), or amendment to the specification to add the reference character(s) in the description in compliance with 37 CFR 1.121(b) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the examiner does not accept the changes, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

4. Claims 1-27 are rejected under 35 U.S.C. 103(a) as being unpatentable over US 6,822,218 B2 to Helmig et al.

Helmig et al disclose a wavelength detection apparatus comprising broadband light source (1), optocoupler (2), optical fiber (3), Bragg gratings (5-6), and photodetector (8).

With respect to claim 1, Helmig et al disclose a device comprising: a fiber grating (6) that senses physical quantities depending on deformations (9); a broadband light source (1), a Bragg grating (5.1, 5.2, 5.n) that achieves a characteristic Bragg wavelength reflection; an optocoupler (2) as a coupler; and photodiode (8) as a light intensity measuring assembly. While Helmig et al do not explicitly disclose that fiber grating (6) is a long period fiber grating, to modify the teachings of Helmig et al accordingly would have been obvious to one of ordinary skill in the art because long period fiber gratings provide the following advantages: (1) ease of manufacture; (2) low back diffraction; and (3) low polarization-dependent loss.

With respect to claim 2, the modified Helmig et al disclose the grating (6) as being dependent on deformations (9) as a corrugate external force.

With respect to claim 3, the modified Helmig et al disclose the photodiode (8) providing an output signal in the form of a voltage (see column 6, lines 30-38).

With respect to claim 4, the modified Helmig et al do not explicitly disclose the use of a laser, but such would have been obvious to one of ordinary skill in the art in order to provide a range of wavelength light.

With respect to claim 5, the modified Helmig et al disclose deformations (9) affecting grating (6) (see column 6, lines 7-14).

With respect to claims 6-7, the modified Helmig et al do not explicitly disclose a WDM and an EDFA, but such would have been obvious to one of ordinary skill in the art to ensure that a quality signal is sent through the fiber grating (6) such that an accurate determination of the physical quality can be achieved.

With respect to claim 8, the light of a specific wavelength is not explicitly disclosed, but such would have been obvious to one of ordinary skill in the art as it would provide applicability for a certain range of wavelengths.

With respect to claim 9, the normalization of light energy is not explicitly disclosed, but such would have been obvious to one of ordinary skill in the art in order to ensure that the noise of the source do not adversely affect the signals detected by photodiode (8).

With respect to claim 10, Helmig et al disclose a device comprising: a fiber grating (6) that modulates reflected light; a broadband light source (1), a Bragg grating

(5.1, 5.2, 5.n) that achieves a characteristic Bragg wavelength reflection; an optocoupler (2) as a coupler; and photodiode (8) as a light intensity measuring assembly. While Helmig et al do not explicitly disclose that fiber grating (6) is a long period fiber grating, to modify the teachings of Helmig et al accordingly would have been obvious to one of ordinary skill in the art because long period fiber gratings provide the following advantages: (1) ease of manufacture; (2) low back diffraction; and (3) low polarization-dependent loss.

With respect to claim 11, the modified Helmig et al disclose the grating (6) as being dependent on deformations (9) as a corrugate external force..

With respect to claim 12, the modified Helmig et al disclose the photodiode (8) providing an output signal in the form of a voltage (see column 6, lines 30-38).

With respect to claim 13, the modified Helmig et al do not explicitly disclose the use of a laser, but such would have been obvious to one of ordinary skill in the art in order to provide a range of wavelength light.

With respect to claim 14, the modified Helmig et al disclose deformations (9) affecting grating (6) (see column 6, lines 7-14).

With respect to claims 15-16, the modified Helmig et al do not explicitly disclose a WDM and an EDFA, but such would have been obvious to one of ordinary skill in the art to ensure that a quality signal is sent through the fiber grating (6) such that an accurate determination of the physical quality can be achieved.

With respect to claim 17, the light of a specific wavelength is not explicitly disclosed, but such would have been obvious to one of ordinary skill in the art as it would provide applicability for a certain range of wavelengths.

With respect to claim 18, the normalization of light energy is not explicitly disclosed, but such would have been obvious to one of ordinary skill in the art in order to ensure that the noise of the source do not adversely affect the signals detected by photodiode (8).

With respect to claim 19, Helmig et al disclose a device comprising: a fiber grating (6) that modulates reflected light; a broadband light source (1), a Bragg grating (5.1, 5.2, 5.n) that achieves a characteristic Bragg wavelength reflection; an optocoupler (2) as a coupler; and photodiode (8) as a light intensity measuring assembly. While Helmig et al do not explicitly disclose that fiber grating (6) is a long period fiber grating nor the use of a narrow band light source, to modify the teachings of Helmig et al accordingly would have been obvious to one of ordinary skill in the art because long period fiber gratings provide the following advantages: (1) ease of manufacture; (2) low back diffraction; and (3) low polarization-dependent loss. In addition, the narrow band light source would provide for specific detection of a light and potentially prevent any interference issues.

With respect to claim 20, the modified Helmig et al disclose the grating (6) as being dependent on deformations (9) as a corrugate external force.

With respect to claim 21, the modified Helmig et al disclose the photodiode (8) providing an output signal in the form of a voltage (see column 6, lines 30-38).

With respect to claim 22, the modified Helmig et al do not explicitly disclose the use of a laser, but such would have been obvious to one of ordinary skill in the art in order to provide a range of wavelength light.

With respect to claim 23, the modified Helmig et al do not explicitly disclose a WDM and an EDFA, but such would have been obvious to one of ordinary skill in the art to ensure that a quality signal is sent through the fiber grating (6) such that an accurate determination of the physical quality can be achieved.

With respect to claim 24-25, the light of a specific wavelength is not explicitly disclosed, but such would have been obvious to one of ordinary skill in the art as it would provide applicability for a certain range of wavelengths.

With respect to claim 26, the use of a transducer is not explicitly disclosed, but such would have been obvious to one of ordinary skill in the art as it would allow for accurate calibration of the detection system.

With respect to claim 27, the use of a normalization is not explicitly disclosed, but such would have been obvious to one of ordinary skill in the art in order to ensure that the noise of the source do not adversely affect the signals detected by photodiode (8).

Conclusion

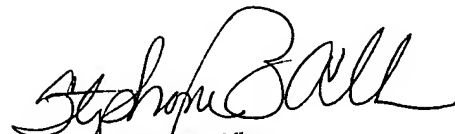
5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Patrick J. Lee whose telephone number is (571) 272-2440. The examiner can normally be reached on Monday through Friday, 8:00 am to 5:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David P. Porta can be reached on (571) 272-2444. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Patrick J. Lee
Examiner
Art Unit 2878

PJL
May 19th, 2005


Stephone B. Allen
Primary Examiner